



STATE OF KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT



ANNUAL DRINKING WATER REPORT FOR 1997

JUNE 1998

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KANSAS DRINKING WATER ANNUAL COMPLIANCE REPORT FOR 1997

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<KANSAS DRINKING WATER IN 1997=

I. INTRODUCTION

The Kansas Department of Health and Environment (**KDHE**) is charged with protecting and improving the health and environment of Kansas through the wise stewardship of resources. To achieve this, KDHE's Bureau of Water, Public Water Supply Section is responsible for regulating all public water supply (**PWS**) systems in the state and assisting them in providing safe and potable water to the people of Kansas. There are over 1,100 public water supply systems in Kansas, consisting of municipal, rural water districts, and privately owned systems. These systems may serve a small community of several families to a city of more than 300,000 persons.

The federal Safe Drinking Water Act (**SDWA**) requires states to prepare and submit to the U.S. Environmental Protection Agency (**EPA**) an annual report on all public water supply systems, including all violations of maximum contaminant levels (**MCL**), treatment techniques, and monitoring violations deemed significant. The annual report is also to be made available to the public. This annual report is for calendar year 1997.

II. PUBLIC WATER SUPPLY SYSTEMS

In the State of Kansas, a public water supply (**PWS**) is defined by Kansas Statute (**K.S.**) 65-162a and Kansas Administrative Regulations (**K.A.R.**) 28-15-11(a) as a "system for delivery to the public of piped water for human consumption that has at least 10 service connections or regularly serves at least 25 individuals daily at least 60 days out of the year." These systems are regulated by the state to assure citizens are supplied safe and pathogen-free drinking water.

In 1997, there were 1,122 PWSs operating in Kansas. All PWSs are required by state regulation (K.A.R. 28-15-18(a)) to be operated and maintained by personnel that

have been properly trained and certified by KDHE. These PWS served an estimated 2,424,621 Kansas residents in addition to all the transient population visiting or traveling through the state on any given day.

PWSs are either community or non-community water systems. The majority of PWSs are community water systems. A community water system regularly serves a year-round resident population. A non-community water system serves a non-resident population. Non-community PWSs that serve non-resident populations can either be transient or non-transient. A transient PWS is one where different people are consuming the water each

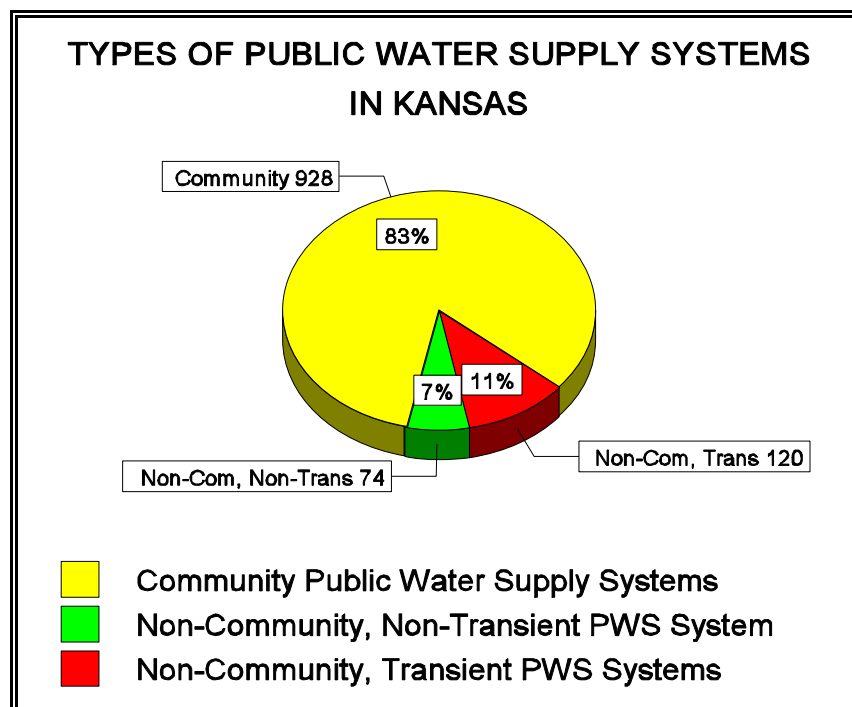
day. In a non-transient PWS the same people are consuming the water each day. Figure 1

shows the type and number of systems in operation during 1997.

TYPES OF PUBLIC WATER SUPPLY SYSTEMS

1. **COMMUNITY** - e.g.: towns, mobile home/trailer parks, rural water districts, subdivisions.
(Same resident consumers every day.)
2. **TRANSIENT NON-COMMUNITY** - e.g.: motels, parks, airports, campgrounds, truck-stops.
(Different non-resident consumers every day.)
3. **NON-TRANSIENT NON-COMMUNITY** - e.g.: schools, day care facilities, industrial or manufacturing facilities.
(Same non-resident consumers every day.)

FIGURE 1.



Water for these systems come from two sources: groundwater (GW) or surface water (SW). Some PWSs obtain water from a combination of both groundwater and surface water. Figure 2 and Table

1 shows the numbers and percentages of systems using groundwater, surface water, or a combination of both. PWSs that use both surface and groundwater as their source are governed by surface water regulations.

FIGURE 2.

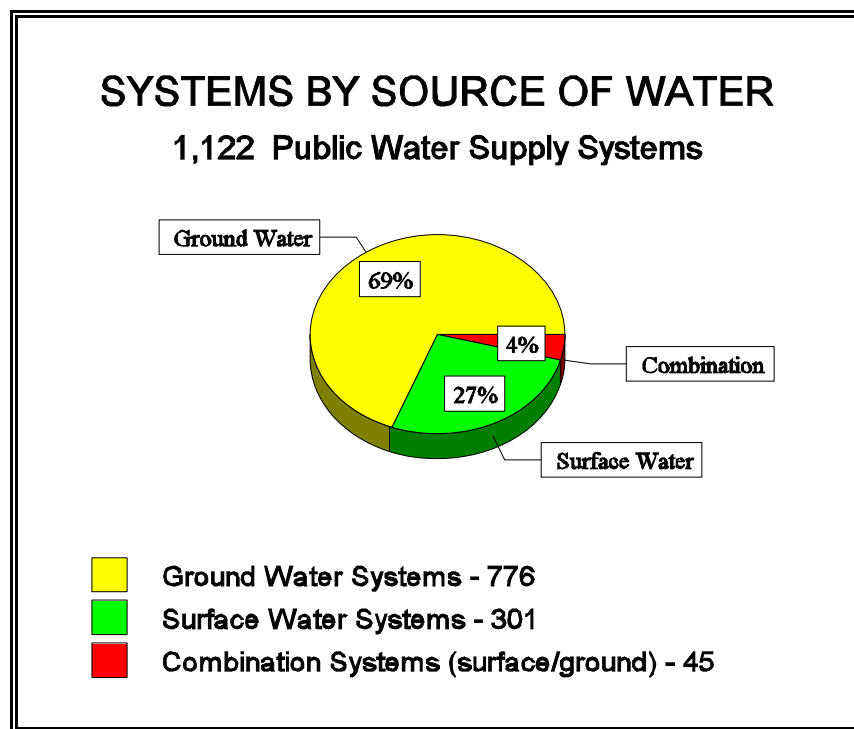


Figure 3 shows the resident population served by groundwater, surface water, or systems using a combination of both. Numbers include systems purchasing surface or groundwater from other PWSs.

FIGURE 3.

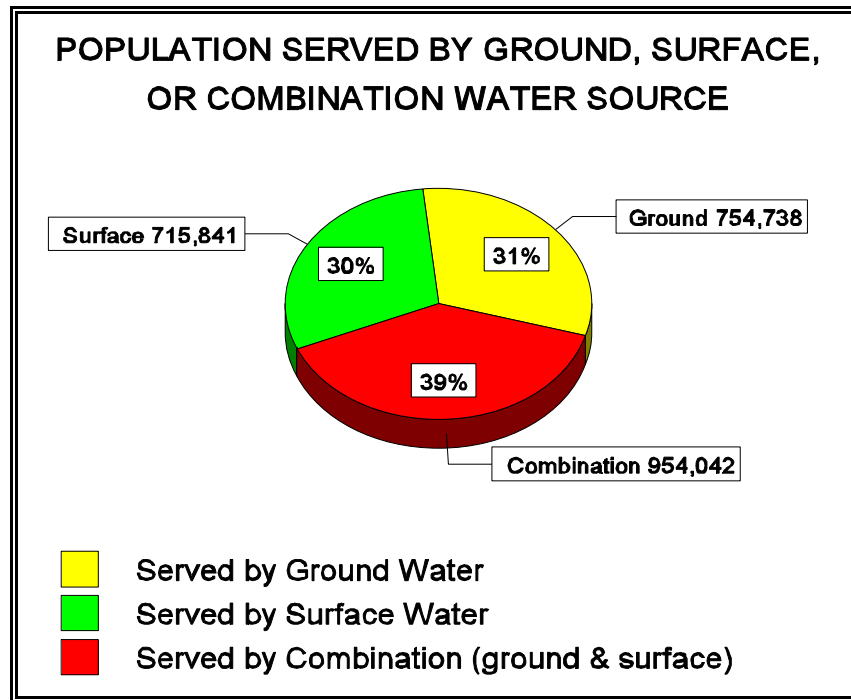


Table 1 shows the three types of PWSs, the number of systems in each type, their source water, and the total population served by each PWS type.

TABLE 1

**SUMMARY OF PUBLIC WATER SUPPLY SYSTEMS
IN KANSAS**

TYPE OF WATER SYSTEM	GW	SW	SW/GW	TOTAL (%)	POPULATION
Community Public Water Systems	590	293	45	928 (83%)	2,399,614
Non-Community-Transient PWSs	114	6	3	120 (11%)	1,655
Non-Community-Non-transient PWSs	72	2	0	74 (6%)	23,352
TOTAL	776	301	48	1,122 (100%)	2,424,621

III. REGULATORY PROGRAMS

To maintain good drinking water quality, several regulatory programs have been developed and implemented by KDHE. These programs monitor water quality in several different areas, ranging from microbiological organisms to organic and inorganic compounds to radionuclides. These regulations set maximum permissible levels for certain contaminants known as Maximum Contaminant Levels (**MCL**). In some situations, regulations also require that minimum water treatment techniques be performed. To verify compliance with these water quality standards, regulations require regular monitoring and reporting of water quality parameters. These regulations are intended to assure that all PWSs provide safe drinking water for human consumption.

ENFORCEMENT AND COMPLIANCE

One of KDHE's Bureau of Water's goal is to assist all PWSs to comply with all drinking water regulations.

KDHE attempts to use the least enforcement action necessary to return PWSs to compliance. Enforcement action is administered using an escalation policy. The first step is to notify the PWS via letter that a violation occurred. Secondly, after three violations have occurred within any twelve month period, a Directive is sent to the PWS. If violations continue then either a Consent Order or an Administrative Order may be issued with or without a monetary fine.

The Bureau's staff is available to assist PWSs with any regulatory concerns, technical questions, or to coordinate available resources that may be needed by a PWS.

KDHE **has not** issued any variances from SDWA MCL requirements to any PWS and has not received any request for variances or exemptions from any PWS. PWSs are expected to comply with all drinking water regulations and to perform public notice for violations of regulations.

Regulations administered by KDHE address the following groups of drinking water contaminants:

- < **TOTAL COLIFORM**
- < **PHASE II/V CHEMICALS**
- < **LEAD AND COPPER**
- < **DISINFECTION BY-PRODUCTS**
- < **SURFACE WATER TREATMENT**
- < **RADIONUCLIDES**

IV. TOTAL COLIFORM

It is well known that water is a common medium for transmitting diseases. Since the advent of the "germ theory of disease" in the late 1800's, the importance of pathogen-free water has been better understood and appreciated. For this reason methods of disinfecting water have been developed. The most common method used today for disinfecting water is chlorination. Chlorination has been in general use in the disinfection of water since the beginning of this century.

In Kansas all PWSs are required by state regulation K.A.R. 28-15-19(a) to disinfect all drinking water provided to the public. To help evaluate the effectiveness of the disinfection method employed and determine microbiological quality, all systems are required by state regulation (K.A.R. 28-15-14)

to submit monthly water samples for total coliform bacteria testing. Total coliform testing is used as an indicator of the possible presence of other bacteriological contaminants. Systems can choose to have this bacteriological testing performed by KDHE's microbiology laboratory or a state certified private laboratory. Systems are required to collect a minimum number of water samples each month based on their population and sample results. No Kansas water system takes less than two samples per month.

A summary of the results of all the water samples analyzed for coliform bacteria during 1997, is presented in Table 2.

TABLE 2.

SUMMARY OF BACTERIOLOGICAL MONITORING - 1997

QUARTER TOTAL	NEGATIVE	COLIFORM	FECAL	INVALID	QTR-
First Quarter:	9,057	39	4	219	9,319
Second Quarter:	9,135	68	20	165	9,388
Third Quarter:	9,650	190	44	278	10,162
Fourth Quarter:	9,440	85	17	287	9,829
Total for 1997:	37,282	382	85	949	38,698

Key: QUARTER = Every three month period, beginning with January ending with December.
NEGATIVE = Samples with no coliform bacteria present.
COLIFORM = Sample with coliform bacteria present.

FECAL = Sample with fecal coliform bacteria present.

INVALID = Sample not analyzable. (too old, excessive chlorine, insufficient sample)

PWSs that fail to collect some or all of the required number of water samples within the monthly compliance period are assessed a *routine monitoring violation*. Systems that have a water sample test positive for coliform bacteria are required to collect three repeat samples (also called check samples). If the system fails to collect these repeat (check) samples, the system is then assessed a *repeat monitoring violation*. Both of these monitoring violations require the system to issue public notice by publishing the violation notice in a local newspaper of general circulation.

PWSs can incur a maximum contaminant level (**MCL**) violation if a number of water samples test positive for total coliform, or the system can incur an acute MCL violation if fecal coliform or E. coli are found along with the total coliform positive samples. In either case, the system is required to notify the public of the violation through the electronic news media (radio and television) and publication of the violation notice in a local newspaper of general circulation.

A summary of all monitoring violations and MCL violations are presented in Table 3.

TABLE 3.

SUMMARY OF MONITORING VIOLATIONS AND
COLIFORM MCL VIOLATIONS IN 1997

TYPE OF VIOLATION	TOTAL # OF VIOLATIONS	# OF SYSTEMS IN VIOLATION	% OF SYSTEMS IN VIOLATION	% OF SYSTEMS IN COMPLIANCE
Monitoring	124	61	5.4 %	94.6 %
Coliform MCL	57	45	4.0 %	96.0 %
Acute Coliform MCL	11	10	0.9 %	99.1 %

COMPLIANCE SUMMARY

Out of a possible 13,464 monitoring violations, (if all 1,122 systems did not monitor during the entire year), only 124 monitoring violations actually occurred. These 124 monitoring violations represent less than one percent (0.9 %) of the total possible violations. In other words, the public water supply systems collectively had a 99 percent compliance rate when it came to routine bacteriological monitoring during 1997. As shown in the table above less than 6 percent of the 1,122 public water supply systems in the state contributed to the one percent of the monitoring violations occurring in 1997. In other words, 94.4 percent of all the public water supply systems had no routine and/or

repeat monitoring violations during 1997.

The percentage of PWSs that incurred an MCL violation because water samples tested positive for coliform or fecal coliform bacteria was less than 5 percent. In other words, 95 percent of all systems were in compliance with the bacteriological MCL regulations.

PWSs that have repeated monitoring and /or MCL violations are subject to being issued an Administrative Order with or without penalty from KDHE. Only one Administrative Order with penalty was issued during 1997, for bacteriological violations. Before an Administrative Order is issued, KDHE first issues a Directive in an attempt to correct the violation in an informal way.

A list of the names of the systems that incurred monitoring and MCL violations is provided in Appendix B at the end of this report.

V. PHASE II/V CHEMICAL RULE

The Phase II/V Chemical Rule is part of the National Primary Drinking Water Regulations of the SDWA. These regulations, established **maximum contaminant levels (MCL)** and treatment techniques for various contaminants affecting drinking water. These contaminants

are all harmful to human health; most being toxic and/or carcinogenic. Numerous contaminants such as solvents, pesticides and herbicides, and heavy metals are regulated by this rule.

This rule contains five groups of contaminants:

- , **ASBESTOS**
- , **NITRATE/NITRITE**
- , **INORGANIC COMPOUNDS (IOC)**
- , **VOLATILE ORGANIC COMPOUNDS (VOC)**
- , **SYNTHETIC ORGANIC COMPOUNDS (SOC)**

This regulation applies to all community water systems and non-transient non-community water systems. The nitrate/nitrite section of this regulation also applies to transient non-community water systems. Water systems that purchase all their water from other systems are not required to monitor for these contaminants.

PWSs monitor for these contaminants under a standardized monitoring schedule consisting of three compliance periods of three years each. During these compliance periods, water systems are required to do specific monitoring depending on the size of their population and whether they use surface or ground water. The first three-year compliance period of this rule began January 1, 1993, and ended December 31, 1995. The current compliance period began January 1, 1996 and will end on December 31, 1998. PWSs using surface water are required to monitor more frequently than groundwater PWSs since surface water is more vulnerable to contaminants. Systems with populations greater than 3,300 are also required to monitor more frequently than small systems with populations of 3,300 or less. The monitoring data presented in this report is for the calendar year of 1997, which is the second year of the second monitoring period.

With the exception of asbestos, this regulation also specifies that all the water samples must be collected at the **point of entry (POE)**. The POE is defined as any point after the raw water has been treated and before it enters the distribution system.

Water supply systems that are out of compliance with this rule, by having failed to monitor or having had an MCL violation, must notify all their consumers of the violation in writing using newspaper, television, radio, mail, and/or posted notices.

V(a). ASBESTOS

In recent years, the health risks associated with asbestos has been brought to the forefront of public awareness. Inhalation of asbestos fibers has been shown to produce lung tumors in laboratory animals and in humans. Ingestion of asbestos fibers greater than 10 micrometers in length has been shown to cause benign tumors in laboratory rats. To reduce the potential risk of cancer or other adverse health effects that have been observed in laboratory animals, EPA has set the drinking water standard for asbestos at 7 million fibers per liter (fibers longer than 10 micrometers).

Asbestos generally enters drinking water either from contact with natural mineral deposits or

asbestos-cement pipes used in water distribution systems. Geologically, Kansas does not have any naturally occurring asbestos. Therefore, Kansas waived asbestos monitoring for most PWSs. However, PWSs using asbestos-cement pipes in their distribution system were required to test for asbestos. To identify systems having asbestos-cement pipes in 1993, KDHE conducted a survey of all viable PWSs. The results of this survey yielded 208 PWSs having asbestos-cement pipe. These systems were required to monitor for asbestos in their distribution systems, before the end of the first compliance period (December 31, 1995).

ASBESTOS MONITORING RESULTS

All analyses for asbestos were performed by private certified laboratories during 1993 through 1995. Of the 208 PWSs required to monitor for asbestos, 207 systems tested below 0.2 million fibers per liter (**MFL**) detection limited. Only one system had a concentration of asbestos greater than the MCL of 7 MFL. This system was required to perform public notice and monitor quarterly for asbestos during 1995. The results of this quarterly monitoring were consistently below the MCL. An investigation of the system determined the cause of the earlier asbestos MCL exceedance was due to a pigging operation (cleaning inside of pipes) involving asbestos cement pipes in the distribution system prior to the initial monitoring. Follow up monitoring showed the system returned to compliance.

No asbestos monitoring was done during 1997. PWSs that have already monitored for asbestos during 1993-1995 compliance period are not required to monitor again until after the year 2001.

V(b). NITRATE / NITRITE

Many drinking water contaminants, such as nitrate and nitrite are found naturally occurring in the environment. Nitrogen may find its way into the groundwater from decaying plant and animal matter, precipitation, and urban runoff. Fertilization of agricultural and urban land with ammonium nitrate, and runoff from livestock operations are a significant cause of nitrate contamination of groundwater.

Excessive amounts of nitrate and nitrite can cause methemoglobinemia in infants, also known as "blue-baby syndrome." To

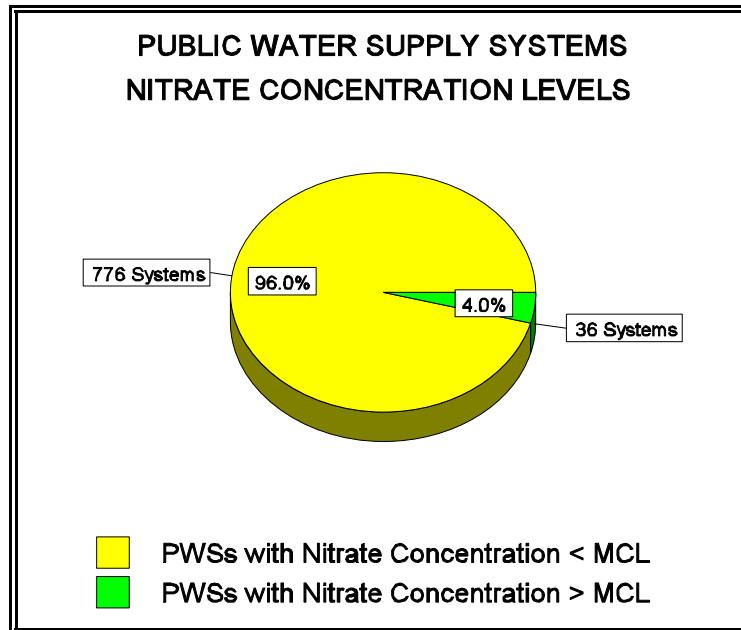
safeguard infants from this condition, Kansas regulations (K.A.R. 28-15-13(b)) set the maximum contaminant level of 10 milligrams per liter (**mg/l**) for nitrate and 1 mg/l for nitrite as the maximum allowable concentration in public drinking water supplies. Kansas regulations (K.A.R. 28-15-14(b)) require PWSs with their own sources of water to monitor all their points of entry (**POE**) at least once a year for nitrate. Systems that exclusively use purchased water from other systems are exempt from this monitoring.

NITRATE MONITORING RESULTS

To comply with these rules, 812 PWSs monitored their POEs for nitrate during 1997. Eighty-four POE water samples had analytical results greater than the nitrate MCL of 10 mg/l. These 84 POE

samples belonged to 36 PWSs. Figure 4 graphically shows these results. Only one PWS incurred a nitrate monitoring violation.

FIGURE 4.

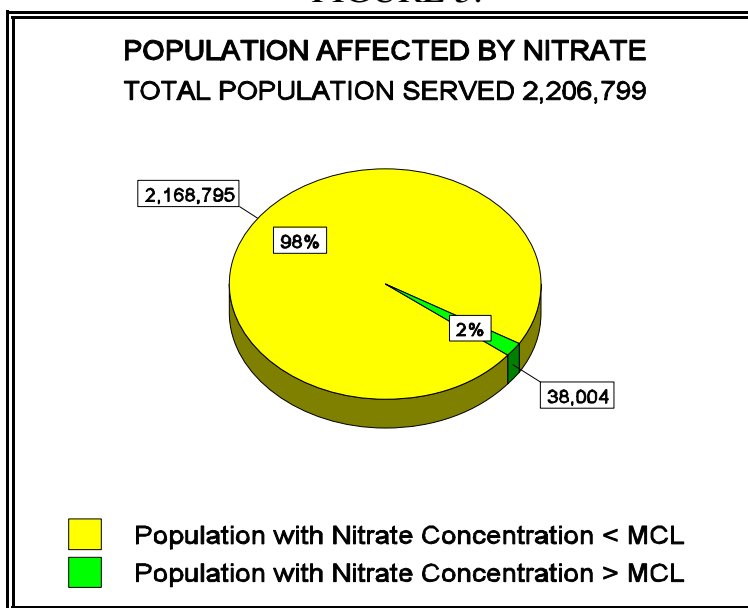


PWSs with nitrate monitoring results above the MCL or failing to monitor were required to do public notice and provide proof to KDHE that public notice was performed. All PWSs with nitrate violations performed the required public notice. PWSs with MCL violations were also required to monitor for nitrate at least on a quarterly basis.

During 1997, seven of these PWSs entered into Consent Orders with KDHE addressing their nitrate MCL violations. Under these Consent Orders, PWSs must provide an alternate source of drinking water that meet all drinking water MCL requirements to the population at risk whenever their regular source of water tests over the nitrate MCL. The PWS must also issue public notice for the violation.

Of the PWSs exceeding 10 mg/l, the median nitrate concentration was 12.16 mg/l. The total population served by all water systems monitoring for nitrate was 2,206,799. The total population of systems that had monitoring results lower than the nitrate MCL was 2,169,579. The total population of systems with a POE with monitoring results exceeding the MCL was 38,004. Figure 5 graphically shows the population affected by nitrate MCL violations.

FIGURE 5.



The names of PWSs that incurred nitrate MCL and monitoring violations are listed in Appendix B.

V(c). INORGANIC COMPOUNDS

Inorganic compounds (IOC) consist of substances that do not have any carbon in their composition. Two major classes of inorganic compounds are metal and non-metals. Kansas regulations (K.A.R. 28-15-13(b)) set MCLs for eight metals and two non-metal contaminants (see Table 4). Most of these IOCs occur naturally in the environment and are soluble in water. Because of this, they are potential contaminants of drinking water. Not all IOCs originate from natural mineral deposits. Industrial activities such as metal finishing, textile manufacturing, mining operations, electroplating, manufacturing of fertilizers, paints, and glass also generate these contaminants.

Inorganic contaminants can be toxic to humans at certain levels. Cadmium, chromium, and selenium can cause damage to the kidneys, liver, and nervous and circulatory systems. Barium has been associated with high blood pressure and mercury has been shown to damage kidneys. Antimony, beryllium, cyanide, nickel, and thallium have been shown to damage the brain, lungs, kidneys, heart, spleen, and liver. Once detected these IOCs can be removed from drinking water using various available technologies such as coagulation/filtration, lime softening, reverse osmosis, ion exchange, chlorine oxidation, activated alumina, and granular activated carbon.

TABLE 4.

REGULATED INORGANIC COMPOUNDS (IOC)

Compound Name	Maximum Contaminant Level (MCL)	
<i>Antimony</i>	0.006	mg/l
<i>Arsenic</i>	0.05	mg/l
<i>Barium</i>	2	mg/l
<i>Beryllium</i>	0.004	mg/l
<i>Cadmium</i>	0.005	mg/l
<i>Chromium</i>	0.1	mg/l
<i>Cyanide</i>	0.2	mg/l
<i>Fluoride</i>	4	mg/l
<i>Mercury</i>	0.002	mg/l
<i>Nickel</i>	0.1	mg/l
<i>Selenium</i>	0.05	mg/l
<i>Thallium</i>	0.002	mg/l

IOC MONITORING FREQUENCY

All community and non-transient non-community public water supply systems are required to monitor each point of entry (**POE**) for IOCs. PWSs using groundwater as their sole source must monitor at least once during every three year compliance period. Systems using surface water as a source must monitor for IOCs at least once a year. Systems exclusively purchasing treated water as their source are exempt from this monitoring. Water systems failing to monitor or incurring a MCL violation are required to notify the public of such violations.

IOC MONITORING RESULTS

During 1997, water samples from 1,126 POEs were collected for full inorganic scans. These 1,126 POE samples were from 700 public water supply systems. Selenium was the only inorganic compound detected above its MCL of 0.05 mg/l. Six PWSs incurred twelve MCL violations for selenium. These six PWSs performed public notice for their selenium MCL violations as required. The total population affected by the selenium MCL violations was 1,815. Three of these eight systems incurred a selenium monitoring violation for one quarter during 1997.

All other IOC results were within acceptable ranges or below MCLs. The names of systems that incurred selenium MCL and monitoring violations are listed in Appendix B.

V(d). VOLATILE ORGANIC COMPOUNDS

Volatile organic compounds (VOC) are commonly referred to as organic solvents. These compounds are generally found as constituents of many degreasers, industrial cleaners, spot/stain removers, paint thinners, in some paints, varnishes and lacquers, in many paint removers/strippers, in many pesticides/herbicides, in most dry cleaning chemicals, in many printing inks and printing press chemicals, in most petroleum products including many types of fuels. These compounds can often be identified by their distinct aromatic smell. Most of these compounds are flammable and toxic to varying degrees. Because of this, they are also a

potential source of environmental pollution and pose a health hazard.

The following twenty-one VOCs are regulated by Kansas regulations (K.A.R. 28-15-13 and 14). These regulations set monitoring frequencies and MCLs for each contaminant. Large PWSs, serving populations of more than 3,300 people, are required to sample each POE at least annually. Small PWSs serving populations of 3,300 or less are required to sample each POE at least once during the three year compliance period (1996 through 1998).

TABLE 5.

REGULATED VOLATILE ORGANIC COMPOUNDS (VOC)

Compound Name	MCL	Uses
<i>Benzene</i>	0.005 mg/l	<i>fuels, pesticides, paints,</i>
<i>pharmaceutical</i>		
<i>Carbon tetrachloride</i>	0.005 mg/l	<i>degreasing agents, fumigants</i>
<i>p-Dichlorobenzene</i>	0.075 mg/l	<i>insecticides, moth balls</i>
<i>o-Dichlorobenzene</i>	0.6 mg/l	<i>insecticides, industrial solvents</i>
<i>1,2 Dichloroethane</i>	0.005 mg/l	<i>gasoline, insecticides</i>
<i>1,1 Dichloroethylene</i>	0.007 mg/l	<i>paints, dyes, plastics</i>
<i>cis-1,2 Dichloroethylene</i>	0.07 mg/l	<i>industrial solvents, chemical manufacturing</i>
<i>trans-1,2 Dichloroethylene</i>	0.1 mg/l	<i>industrial solvents, chemical manufacturing</i>
<i>Dichloromethane</i>	0.005 mg/l	<i>paint strippers, refrigerants, fumigants</i>
<i>1,2 Dichloropropane</i>	0.005 mg/l	<i>soil fumigants, industrial solvents</i>
<i>Ethylbenzene</i>	0.7 mg/l	<i>gasoline, insecticides</i>
<i>Monochlorobenzene</i>	0.1 mg/l	<i>industrial solvents, pesticides</i>
<i>Styrene</i>	0.1 mg/l	<i>plastics, synthetic rubber, resins</i>
<i>Tetrachloroethylene</i>	0.005 mg/l	<i>dry cleaning/industrial solvents</i>
<i>Toluene</i>	1 mg/l	<i>gasoline, industrial solvents</i>
<i>1,2,4 Trichlorobenzene</i>	0.07 mg/l	<i>industrial solvents</i>
<i>1,1,1 Trichloroethane</i>	0.2 mg/l	<i>metal cleaning/degreasing agent</i>
<i>1,1,2 Trichloroethane</i>	0.005 mg/l	<i>industrial degreasing solvents</i>

<i>Trichloroethylene</i>	<i>0.005</i>	<i>mg/l</i>	<i>paint strippers, dry cleaning, degreasers</i>
<i>Vinyl chloride</i>	<i>0.002</i>	<i>mg/l</i>	<i>plastics/synthetic rubber, solvents</i>
<i>Xylenes</i>	<i>10</i>	<i>mg/l</i>	<i>paints/inks solvent, synthetic fibers, dyes</i>

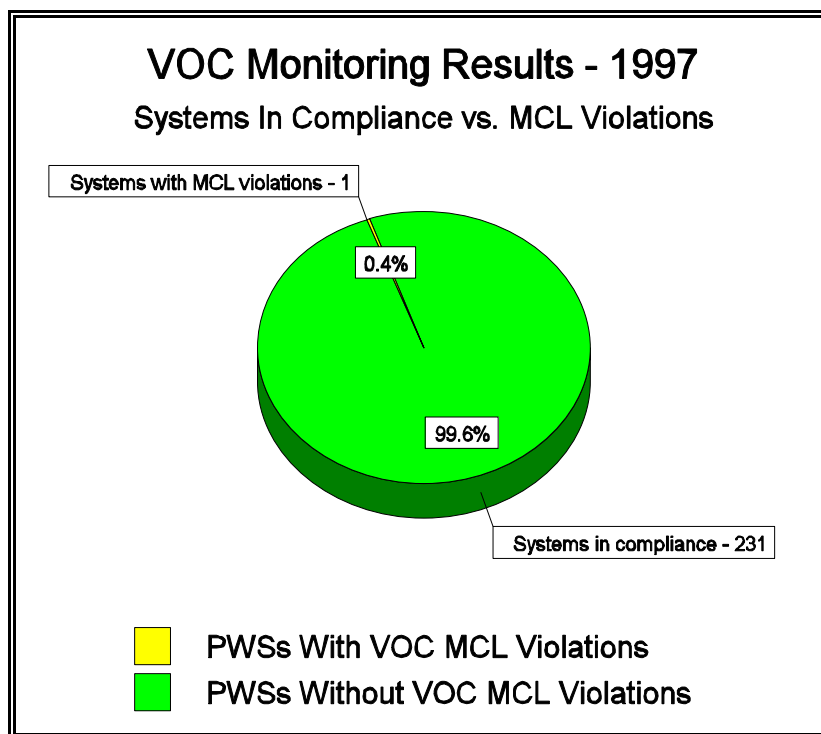
VOC MONITORING RESULTS

During 1997, four hundred twenty-two POEs from 232 PWSs were monitored for all regulated and unregulated VOCs, including trihalomethanes.

The results from this VOC monitoring, concluded in 1997, with one PWS having one POE test greater than the MCL for benzene. This MCL violation involved one system out of the 232 systems monitored. Figure 6, shows the comparison of systems with VOC MCL violations versus those with no violations. The PWS with the VOC violation returned to compliance the following quarter. The PWS was a small groundwater system with an affected population of 1,073. No PWSs incurred VOC monitoring violations during 1997.

The name of the system that incurred the VOC MCL violations is listed in Appendix B.

FIGURE 6.



V(e). SYNTHETIC ORGANIC COMPOUNDS

Synthetic organic compounds (**SOC**) are man-made compounds, many of which are chlorinated and used as herbicides, pesticides, fungicides, and insecticides. Kansas regulation (K.A.R. 28-15-14) requires PWS to monitor their drinking water for 33 SOC's. This regulation sets an MCL for each SOC. PWSs failing to monitor or having a MCL violation, must notify the public of such violation and provide proof of performing the public notice to KDHE.

TABLE 6.

REGULATED SYNTHETIC ORGANIC COMPOUNDS (SOC)

Compound Name	MCL	Uses
<i>Alachlor (Lasso)</i>	0.002 mg/l	<i>weed control</i>
<i>Aldicarb</i>	0.003 mg/l	<i>insecticide</i>
<i>Aldicarb sulfoxide</i>	0.003 mg/l	<i>insecticide</i>
<i>Aldicarb sulfone</i>	0.003 mg/l	<i>insecticide</i>
<i>Atrazine (Atranex, Crisazina)</i>	0.003 mg/l	<i>weed control</i>
<i>Benzo(a)pyrene</i>	0.0002 mg/l	<i>coal tar lining & sealants</i>
<i>Carbofuran (Furadan 4F)</i>	0.04 mg/l	<i>rootworm, weevil control</i>

<i>Chlordane</i>	0.002 mg/l	<i>termite control</i>
<i>Dalapon</i>	0.2 mg/l	<i>herbicide</i>
<i>Dibromochloropropane(DBCP, Nemaflume)</i>	0.0002 mg/l	<i>pesticide, nematocide, soil fumigant</i>
<i>2,4-D (2,4-dichlorophenoxyacetic acid)</i>	0.07 mg/l	<i>weed control, defoliant</i>
<i>2,4,5-TP (Silvex)</i>	0.05 mg/l	<i>herbicide, defoliant</i>
<i>Di(diethylhexyl)adipate</i>	0.4 mg/l	<i>plasticizer</i>
<i>Di(diethylhexyl)phthalate</i>	0.006 mg/l	<i>plasticizer</i>
<i>Dinoseb (2,4-dinitro-6-sec-butylphenol)</i>	0.007 mg/l	<i>insecticide, herbicide</i>
<i>Diquat</i>	0.02 mg/l	<i>herbicide</i>
<i>Endothall</i>	0.1 mg/l	<i>herbicide, defoliant</i>
<i>Endrin</i>	0.002 mg/l	<i>insecticide</i>
<i>Ethylene Dibromide (EDB, Bromofume)</i>	0.0005 mg/l	<i>gasoline additive, fumigants, & solvents</i>
<i>Glyphosate</i>	0.7 mg/l	<i>herbicide</i>
<i>Heptachlor (H-34,Heptox)</i>	0.0004 mg/l	<i>termite control</i>
<i>Heptachlor epoxide</i>	0.0002 mg/l	<i>insecticide</i>
<i>Hexachlorobenzene</i>	0.001 mg/l	<i>by-product of solvents & pesticides</i>
<i>Hexachlorocyclopentadiene</i>	0.05 mg/l	<i>pesticide, fungicide</i>
<i>Lindane</i>	0.0002 mg/l	<i>pesticide</i>
<i>Methoxychlor (DMDT, Marlate)</i>	0.04 mg/l	<i>insecticide</i>
<i>Oxamyl (Vydate)</i>	0.2 mg/l	<i>insecticide</i>
<i>Pentachlorophenol (PCP)</i>	0.001 mg/l	<i>herbicide, fungicide, wood preservative</i>
<i>Picloram (Tordon)</i>	0.5 mg/l	<i>herbicide, defoliant</i>
<i>Polychlorinated Biphenyls (PCB, Aroclors)</i>	0.0005 mg/l	<i>herbicide</i>
<i>Simazine</i>	0.004 mg/l	<i>herbicide</i>
<i>2,3,7,8 TCDD (Dioxin)</i>	3E-8 mg/l	<i>pesticide byproduct</i>
<i>Toxaphene</i>	0.003 mg/l	<i>pesticide</i>

SOC MONITORING WAIVER

The monitoring requirements for Diquat, Endothall, Glyphosate, and 2,3,7,8-TCDD (Dioxin) were waived by KDHE since they are not widely used in the state and have never been previously detected, or like glyphosate they are changed to a non-toxic chemical by chlorination. This monitoring waiver collectively saved public water supply systems close to one million dollars in laboratory analysis costs during the first compliance period.

During the first compliance period of 1993 through 1995, all required PWSs performed

monitoring for all SOC's listed in Table 6, above, with the exception of the chemicals previously waived. Atrazine and ethylene dibromide were the only contaminants in the SOC group that were detected over their MCL. Based on the results of this monitoring data, KDHE allowed, with EPA approval, PWSs to only monitor for atrazine during the current compliance period of 1996 through 1998. Other than atrazine, no other pesticide contaminants were detected by themselves. Alachlor, the only other pesticide detected, always appeared in conjunction with atrazine.

PWSs utilizing groundwater are required to monitor each POE at least once during the three year compliance period (1996-98). Small systems (population# 3,300) utilizing surface water are required to monitor their POE a minimum of one quarter during the three year compliance period and the sample must be collected during the months of May or June. Large surface water systems (population > 3,300) are required to monitor their POE at least annually during the months of May or June.

Groundwater PWSs that had no SOC detects during the previous compliance period (1993-95), tested for atrazine during 1997, using an

immunoassay method (EPA Method 4670). This immunoassay method was used because it is highly sensitive in detecting any contaminant in the triazine family and is only one fourth the cost of the regular drinking water method.

Groundwater systems with previous SOC detects and all surface water systems were required to perform the regular atrazine testing using approved EPA Method 507, which also detects alachlor, the only other pesticide detected during the previous compliance period.

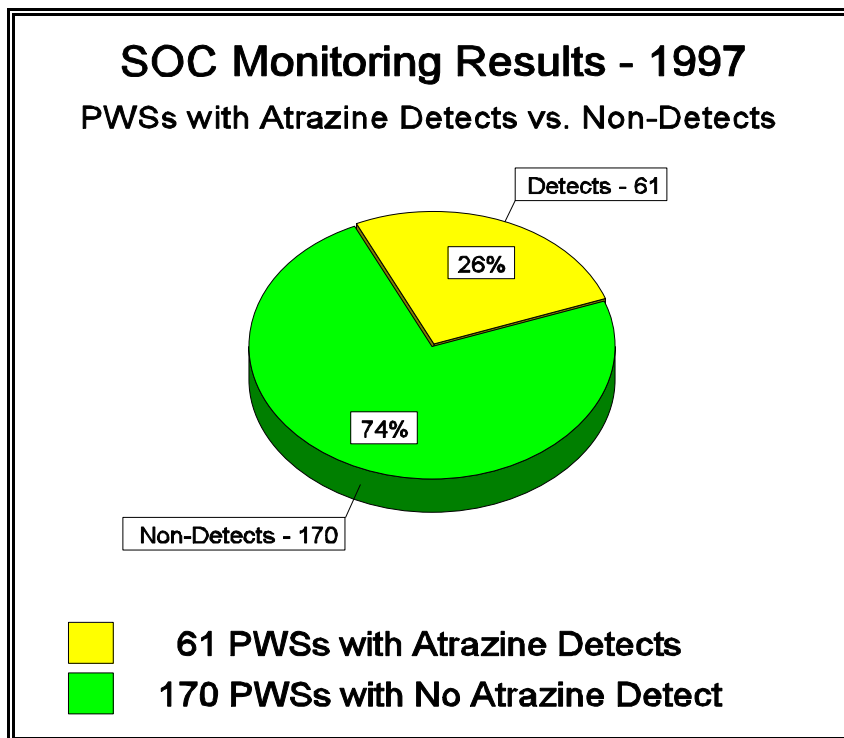
SOC MONITORING RESULTS

A total of 231 PWSs tested 398 POEs for atrazine during 1997. Of these 61 PWSs had atrazine detected in 114 POEs. In four of the 114 POEs atrazine was detected above the MCL of 3.0 mg/l. These four systems performed additional monitoring (confirmation samples) which resulted in the two concentrations averaging below the MCL. Of all the PWSs detecting atrazine, 48 were surface water systems and 13 were groundwater systems. All four PWSs that detected atrazine over the MCL were surface water systems. The remaining 170 PWSs had 284 POEs where no atrazine was detected. The median atrazine level detected during all monitoring in 1997, was 0.35 mg/l, well below the MCL of 3.0 mg/l.

One PWS incurred an MCL violation for ethylene dibromide (**EDB**). This MCL violation affected a population of 252 persons. This system performed public notice and has since returned to compliance.

Figure 7 shows the PWSs that detected atrazine vs. systems that had no atrazine detected. There were no PWSs with atrazine monitoring or MCL violations during 1997.

FIGURE 7.



VI. LEAD & COPPER

High exposure to metals in humans has long been recognized as a cause of adverse health effects. Lead has been singled out because of its possible appearance in drinking water and its high toxicity to humans. Copper, although an essential nutrient, also poses a health threat at elevated levels. Young children are especially susceptible to the toxic effects of these metals.

Due to the use of lead and copper in water pipes and in plumbing solder in years past, these contaminants have the possibility of leaching into the drinking water. Besides leaching from water pipes and solder, lead and

copper can also leach from brass water faucet fixtures.

Because of this concern, Congress in the 1986 Safe Drinking Water Act amendments directed EPA to set regulations for lead and copper in drinking water. KDHE adopted this regulation by reference in K.A.R. 28-15-22.

This regulation applies to all community water systems, and non-transient non-community water systems. These PWSs are required to monitor for lead and copper on a scheduled basis. If monitoring results indicate unacceptable levels, the water system is

required to initiate corrosion control treatment techniques to minimize lead and copper contamination. Action levels set by this

regulation are 0.015 mg/l for lead and 1.3 mg/l for copper.

LEAD AND COPPER MONITORING RESULTS

Five hundred and nine PWSs monitored for lead and copper during 1997. Four systems failed to perform initial tap sampling. Eleven systems incurred routine and follow-up monitoring violations and were required to do public notice for such violations. Fourteen systems exceeded the lead or copper action levels. These systems were required to proceed with corrosion control treatment techniques and if lead was exceeded, implement public education programs. One system failed to perform treatment installation. Notices of violation were sent to three systems which failed to perform public education. These PWSs were required to do public notice for such violations.

These violations translate to a 97% compliance rate for monitoring and a 99% compliance rate with treatment installation and public education. The names of the systems which incurred violations of this regulation are listed in Appendix B.

VII. DISINFECTION BY-PRODUCTS

To ensure drinking water is safe and pathogen free it must be disinfected. The most commonly used method of disinfection is chlorination. Unfortunately, the chlorine added to water to kill harmful microorganisms also combines with organic matter naturally present in water to form chemical compounds called trihalomethanes or **THMs**. These THMs are suspected of being possible carcinogens.

Because of this concern, Kansas (K.A.R. 28-15-13), established a maximum contaminant level of 0.10 milligrams per liter (mg/l) for total THMs (**TTHM**) in drinking water. Compliance with this MCL of 0.10 mg/l is determined by adding the concentrations of all THMs detected in a water sample collected from the distribution system. This regulation requires all PWSs serving 10,000 or more people to monitor for TTHMs on a quarterly basis. The following table shows the four THMs that must be monitored for in drinking water.

TABLE 7.

TRIHALOMETHANES (THMs)

TRICHLOROMETHANE (CHLOROFORM)	(CHCl ₃)
TRIBROMOMETHANE (BROMOFORM)	(CHBr ₃)
BROMODICHLOROMETHANE	(CHBrCl ₂)
DIBROMOCHLOROMETHANE	(CHBr ₂ Cl)

MONITORING RESULTS FOR THMs

Thirty-two systems were required to monitor for THMs during 1997. Most large PWSs in Kansas are surface water systems. Surface water generally has more suspended and dissolved solids than groundwater. Of the 18 surface and 14 groundwater PWSs monitoring, only one surface water PWS incurred an MCL violation. No PWSs incurred monitoring violations. A 97% compliance rate was achieved for this regulation during 1997.

VIII. SURFACE WATER TREATMENT

Almost one third of all PWSs in Kansas use surface water as part or all of their source water. These systems provide drinking water to about two thirds of the Kansas population served by PWSs. Water for these systems comes from rivers or man-made reservoirs located throughout the state.

Unlike most groundwater that is protected by the earth's crust, surface water is exposed to the atmosphere and surface runoff. This exposure makes surface water more vulnerable

to contamination than most groundwater. For this reason special regulations have been developed specifically for surface water and groundwater such as springs and shallow wells which are vulnerable to surface contamination.

Kansas regulations (K.A.R. 28-15-21), address specific treatment requirements for surface water. This regulation requires that surface water systems, "shall provide filtration and disinfection treatment of source water . . . Systems which do not meet the requirements

... are in violation ... and shall issue public notice as required ...”

This regulation requires systems to filter their raw water, and keep a record of turbidity readings of the finished water entering the distribution system. Water with high turbidity levels adversely affects the efficiency of the disinfection process, causes the undesirable formation of trihalomethanes (THMs), and may indicate the presence of viruses or Giardia lamblia. For these reasons turbidity limits are set depending on the type of filtration used. A maximum of 5.0 nephelometric turbidity units (NTU) is set for any single reading.

The regulation requires that the filtering process in conjunction with the disinfection treatment remove or inactivate 99.99 percent of viruses and 99.9 percent of Giardia Lamblia cysts. The presence of viruses in drinking water can cause stomach cramps and/or gastroenteritis (intestinal distress). The disinfectant concentration in the water entering the distribution system is required to be at least 0.2 mg/l of free chlorine or 1.0 mg/l of combined chlorine. These chlorine residual readings must be taken at set intervals and recorded by the water operator. Turbidity and disinfection records are required to be submitted to KDHE on a monthly basis for compliance determination.

SURFACE WATER MONITORING RESULTS

During 1997, twenty-one PWSs incurred 21 violations of the surface water treatment regulations. Of the 21 systems with violations, eight systems had 12 monitoring violations and 14 systems had 23 treatment technique violations, exceeding turbidity levels. For the 106 surface water systems (including systems using both ground and surface) required to comply with this regulation, the compliance rates were 92 percent for monitoring and 87 percent for treatment technique.

As required, the 21 systems performed public notification of such violations to their customers. The names of the systems which incurred violations of this regulation are listed in Appendix B.

IX. RADIONUCLIDES

Radiation occurs naturally and is readily present in the environment. Radiation in groundwater occurs mainly when the natural decay of uranium in rocks and soil comes in contact with groundwater. In most circumstances, this radiation occurs at such low levels as to be harmless to human health. Occasionally, in some areas of the state these radiation levels do occur at higher levels which may present a health risk. For this reason, regulations have been legislated requiring public water supply systems to monitor their water for radionuclides. The following table shows radiological contaminants and their corresponding MCLs as set by Kansas regulations (K.A.R. 28-15-13 (d) (1)).

TABLE 8.
RADIONUCLIDES

Contaminant	Source / Uses	MCL
Gross alpha	natural decay of uranium in rocks and soil	15 pCi/l
Gross beta	natural decay of uranium in rocks and soil, nuclear weapon production, pharmaceuticals.	50 pCi/l or 4 mrem/yr
Radium 226	natural decay of uranium in rocks and soil	5 pCi/l
Radium 228	natural decay of uranium in rocks and soil	5 pCi/l
Strontium-90	artificial isotope, used in research and medicine, in industrial density measuring devices, in atomic batteries, in luminous paint.	8 pCi/l
Tritium	man-made isotope, used as chemical tracer in research, in nuclear weapons production, in luminous instrument dials.	20,000 pCi/l

Key: pCi/l = picoCurie per liter
mrem/yr = millirem per year

MONITORING RESULTS FOR RADIONUCLIDES

Five systems incurred nine MCL violations for combined radium 226 & 228 during 1997. All these PWSs were issued a Notice of Violation and required to do public notice for the MCL violations. No monitoring violation occurred during 1997. The names of the systems which incurred these MCL violations are listed in Appendix B.

X. CONCLUSION

The **bacteriological** monitoring of 1,122 systems resulted in 10 systems having an acute MCL violation and 45 systems having a non-acute MCL violation. This resulted in a 95% of all systems being in compliance with only 5% having a violation. The population affected by these violations was 19,544 or 0.8% of the population served by all PWSs. Systems in violation for failing to sample were

61 out of 1,122, for a 94% compliance rate. The population affected by these monitoring violations was 16,231 or 0.07% of the population served by all systems.

In the organic contaminant group (VOCs and SOCs), only two compounds - **benzene**, and **ethylene dibromide (EDB)** - caused PWSs to incur in an MCL violation. Two PWSs out of 232 monitoring incurred in these MCL violations. This translates to 99.2% of all PWSs monitoring in compliance, with only 0.8 % having a violation. The population affected by this benzene and EDB MCL violations was 1,325. Both of these PWSs are currently returned to compliance.

Nitrate and **selenium** were the only inorganic contaminants detected above their MCL. **Nitrate** MCL violations occurred in 36 out of 812 systems monitoring. This translates to less than 5% of PWSs being in violation, leaving 95% of PWSs in compliance. The population affected by these nitrate violations was 38,004, or less than 2% of the total population served in Kansas.

Selenium was detected above the MCL in three of the 700 PWSs monitoring during 1997. This translates to less than 1% of the systems monitoring being in violation for selenium, leaving 99.6% in compliance. The population affected by these three selenium MCL violations was 758 or less than 0.01% of the total population served in Kansas.

Twenty-one systems incurred **surface water treatment** violations out of 106 surface water systems. Fourteen systems had treatment technique violations and eight systems had monitoring/reporting violations (note one system incurred both types of violations). These results place 80% of all surface water systems in compliance with surface water regulations during 1997.

Lead and copper monitoring resulted in 11 systems with a monitoring violations. The number of systems monitored and reported for lead and copper was 509. Less than 3% of systems were in violation, leaving 97% in compliance. Of the systems monitored, one had a treatment installation violation, and three systems failed to perform the public education requirements.

Disinfection by-product monitoring for TTHMs resulted in only one system having an MCL violation. No monitoring violations occurred during 1997. This translates to a 97% compliance rate with 13,282 persons affected.

Radionuclide monitoring resulted in four PWSs detecting radium 226/228 above its MCL. This amounts to less than one percent of systems being in violation, leaving 99% in compliance. The population affected by these radium violations was 4,997.

TABLE 9.

GENERAL COMPLIANCE SUMMARY

REGULATORY PROGRAM	COMPLIANCE
Total Coliform	94%
Nitrate / Nitrite	97%
Inorganic Compounds (IOCs)	97%
Volatile Organic Compounds (VOCs)	99%
Synthetic Organic Compounds (SOCs)	99%
Total Trihalomethanes (TTHMs)	100%
Lead and Copper	97%
Surface Water Treatment	80%
Radionuclides	99%

APPENDIX A
MCL VIOLATION TABLES
AND DEFINITIONS

Appendix A
Violations Table
(with SDWIS Codes)

State:	KANSAS
Reporting Interval:	1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Organic Contaminants							
2981	1,1,1-Trichloroethane	0.2	0	0			0	0
2977	1,1-Dichloroethylene	0.007	0	0			0	0
2985	1,1,2-Trichloroethane	.005	0	0			0	0
2378	1,2,4-Trichlorobenzene	.07	0	0			0	0
2931	1,2-Dibromo-3-chloropropane (DBCP)	0.0002	0	0			0	0
2980	1,2-Dichloroethane	0.005	0	0			0	0
2983	1,2-Dichloropropane	0.005	0	0			0	0
2063	2,3,7,8-TCDD (Dioxin)	3x10 ⁻⁸	0	0			0	0
2110	2,4,5-TP	0.05	0	0			0	0
2105	2,4-D	0.07	0	0			0	0
2265	Acrylamide				0	0		

State: KANSAS

Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2051	Alachlor	0.002	0	0			0	0
2050	Atrazine	0.003	0	0			0	0
2990	Benzene	0.005	1	1			0	0
2306	Benzo[a]pyrene	0.0002	0	0			0	0
2046	Carbofuran	0.04	0	0			0	0
2982	Carbon tetrachloride	0.005	0	0			0	0
2959	Chlordane	0.002	0	0			0	0
2380	cis-1,2-Dichloroethylene	0.07	0	0			0	0
2031	Dalapon	0.2	0	0			0	0
2035	Di(2-ethylhexyl)adipate	0.4	0	0			0	0
2039	Di(2-ethylhexyl)phthalate	0.006	0	0			0	0
2964	Dichloromethane	0.005	0	0			0	0
2041	Dinoseb	0.007	0	0			0	0
2032	Diquat	0.02	0	0			0	0
2033	Endothall	0.1	0	0			0	0
2005	Endrin	0.002	0	0			0	0

State: KANSAS

Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2257	Epichlorohydrin				0	0		
2992	Ethylbenzene	0.7	0	0			0	0
2946	Ethylene dibromide (EDB)	0.00005	1	1			0	0
2034	Glyphosate	0.7	0	0			0	0
2065	Heptachlor	0.0004	0	0			0	0
2067	Heptachlor epoxide	0.0002	0	0			0	0
2274	Hexachlorobenzene	0.001	0	0			0	0
2042	Hexachlorocyclopentadiene	0.05	0	0			0	0
2010	Lindane	0.0002	0	0			0	0
2015	Methoxychlor	0.04	0	0			0	0
2989	Monochlorobenzene	0.1	0	0			0	0
2968	o-Dichlorobenzene	0.6	0	0			0	0
2969	para-Dichlorobenzene	0.075	0	0			0	0
2383	Total polychlorinated biphenyls	0.0005	0	0			0	0
2326	Pentachlorophenol	0.001	0	0			0	0

State: KANSAS

Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
2987	Tetrachloroethylene	0.005	0	0			0	0
2984	Trichloroethylene	0.005	0	0			0	0
2996	Styrene	0.1	0	0			0	0
2991	Toluene	1	0	0			0	0
2979	trans-1,2-Dichloroethylene	0.1	0	0			0	0
2955	Xylenes (total)	10	0	0			0	0
2020	Toxaphene	0.003	0	0			0	0
2036	Oxamyl (Vydate)	0.2	0	0			0	0
2040	Picloram	0.5	0	0			0	0
2037	Simazine	0.004	0	0			0	0
2976	Vinyl chloride	0.002	0	0			0	0
2950	Total trihalomethanes	0.10	1	1			0	0

State: KANSAS

Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Inorganic Contaminants							
1074	Antimony	0.006	0	0			0	0
1005	Arsenic	0.05	0	0			0	0
1094	Asbestos	7 million fibers/R # 10 µm	0	0			0	0
1010	Barium	2	0	0			0	0
1075	Beryllium	0.004	0	0			0	0
1015	Cadmium	0.005	0	0			0	0
1020	Chromium	0.1	0	0			0	0
1024	Cyanide (as free cyanide)	0.2	0	0			0	0
1025	Fluoride	4.0	0	0			0	0
1035	Mercury	0.002	0	0			0	0
1040	Nitrate	10 (as Nitrogen)	84	36			0	0
1041	Nitrite	1 (as Nitrogen)	0	0			0	0
1045	Selenium	0.05	3	3			4	4
1085	Thallium	0.002	0	0			0	0

State: KANSAS
Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
1038	Total nitrate and nitrite	10 (as Nitrogen)	0	0			0	0

State: KANSAS

Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Radionuclide MCLs							
4000	Gross alpha	15 pCi/R	0	0			0	0
4010	Radium-226 and radium-228	5 pCi/R	8	4			0	0
4101	Gross beta	4 mrem/yr	0	0			0	0
	Subtotal		8	4			0	0

State: KANSAS

Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Total Coliform Rule							
21	Acute MCL violation	Presence	11	10				
22	Non-acute MCL violation	Presence	57	45				
23,25	Major routine and follow up monitoring						124	61
28	Sanitary survey ²						0	0
	Subtotal		68	55			124	61

State: KANSAS

Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Surface Water Treatment Rule							
	Filtered systems							
36	Monitoring, routine/repeat						12	8
41	Treatment techniques				21	14		
	Unfiltered systems							
31	Monitoring, routine/repeat						0	0
42	Failure to filter				0	0		
	Subtotal				21	14	12	8

State: KANSAS
Reporting Interval: 1997

SDWIS Codes		MCL (mg/R) ¹	MCLs		Treatment Techniques		Significant Monitoring/Reporting	
			Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations	Number of Violations	Number of Systems With Violations
	Lead and Copper Rule							
51	Initial lead and copper tap M/R						4	4
52	Follow-up or routine lead and copper tap M/R						11	11
58,62	Treatment Installation				1	1		
65	Public education				3	3		
	Subtotal				4	4	15	15

1. Values are in milligrams per liter (mg/R), unless otherwise specified
2. Number of major monitoring violations for sanitary survey under the Total Coliform Rule

Definitions for Violations Table

The following definitions apply to the Summary of Violations table.

Filtered Systems: Water systems that have installed filtration treatment [40 CFR 141, Subpart H].

Inorganic Contaminants: Non-carbon-based compounds such as metals, nitrates, and asbestos. These contaminants are naturally-occurring in some water, but can get into water through farming, chemical manufacturing, and other human activities. EPA has established MCLs for 15 inorganic contaminants [40 CFR 141.62].

Lead and Copper Rule: This rule established national limits on lead and copper in drinking water [40 CFR 141.80-91]. Lead and copper corrosion pose various health risks when ingested at any level, and can enter drinking water from household pipes and plumbing fixtures. States report violations of the Lead and Copper Rule in the following six categories:

Initial lead and copper tap M/R: SDWIS Violation Code 51 indicates that a system did not meet initial lead and copper testing requirements, or failed to report the results of those tests to the State.

Follow-up or routine lead and copper tap M/R: SDWIS Violation Code 52 indicates that a system did not meet follow-up or routine lead and copper tap testing requirements, or failed to report the results.

Treatment installation: SDWIS Violation Codes 58 AND 62 indicate a failure to install optimal corrosion control treatment system (58) or source water treatment system (62) which would reduce lead and copper levels in water at the tap. [One number is to be reported for the sum of violations in these two categories].

Public education: SDWIS Violation Code 65 shows that a system did not provide required public education about reducing or avoiding lead intake from water.

Maximum Contaminant Level (MCL): The highest amount of a contaminant that EPA allows in drinking water. MCLs ensure that drinking water does not pose either a short-term or long-term health risk. MCLs are defined in milligrams per liter (parts per million) unless otherwise specified.

Monitoring: EPA specifies which water testing methods the water systems must use, and sets schedules for the frequency of testing. A water system

that does not follow EPA's schedule or methodology is in violation [40 CFR 141].

States must report monitoring violations that are significant as determined by the EPA Administrator and in consultation with the States. For purposes of this report, significant monitoring violations are major violations and they occur when no samples are taken or no results are reported during a compliance period. A major monitoring violation for the surface water treatment rule occurs when at least 90% of the required samples are not taken or results are not reported during the compliance period.

Organic Contaminants: Carbon-based compounds, such as industrial solvents and pesticides. These contaminants generally get into water through runoff from cropland or discharge from factories. EPA has set legal limits on 54 organic contaminants that are to be reported [40 CFR 141.61].

Radionuclides: Radioactive particles which can occur naturally in water or result from human activity. EPA has set legal limits on four types of radionuclides: radium-226, radium-228, gross alpha, and beta particle/photon radioactivity [40 CFR 141]. Violations for these contaminants are to be reported using the following three categories:

Gross alpha: SDWIS Contaminant Code 4000 for alpha radiation above MCL of 15 picocuries/liter. Gross alpha includes radium-226 but excludes radon and uranium.

Combined radium-226 and radium-228: SDWIS Contaminant Code 4010 for combined radiation from these two isotopes above MCL of 5 pCi/L.

Gross beta: SDWIS Contaminant Code 4101 for beta particle and photon radioactivity from man-made radionuclides above 4 millirem/year.

Reporting Interval: The reporting interval for violations to be included in the first PWS Annual Compliance Report, which is to be submitted to EPA by January 1, 1998, is from July 1, 1996 through June 30, 1997. This interval will change for future annual reports. See guidance language for these intervals.

SDWIS Code: Specific numeric codes from the Safe Drinking Water Information System (SDWIS) have been assigned to each violation type included in this report. The violations to be reported include exceeding contaminant MCLs, failure to comply with treatment requirements, and failure to meet monitoring and reporting requirements. Four-digit SDWIS Contaminant Codes have also been included in the chart for specific MCL contaminants.

Surface Water Treatment Rule: The Surface Water Treatment Rule establishes criteria under which water systems supplied by surface water sources, or ground water sources under the direct influence of surface water, must filter and disinfect their water [40 CFR 141, Subpart H]. Violations of the "Surface Water Treatment Rule" are to be reported for the following four categories:

Monitoring, routine/repeat (for filtered systems): SDWIS Violation Code 36 indicates a system's failure to carry out required tests, or to report the

results of those tests.

Treatment techniques (for filtered systems): SDWIS Violation Code 41 shows a system's failure to properly treat its water.

Monitoring, routine/repeat (for unfiltered systems): SDWIS Violation Code 31 indicates a system's failure to carry out required water tests, or to report the results of those tests.

Failure to filter (for unfiltered systems): SDWIS Violation Code 42 shows a system's failure to properly treat its water. Data for this violation code will be supplied to the States by EPA.

Total Coliform Rule (TCR): The Total Coliform Rule establishes regulations for microbiological contaminants in drinking water. These contaminants can cause short-term health problems. If no samples are collected during the one month compliance period, a significant monitoring violation occurs. States are to report four categories of violations:

Acute MCL violation: SDWIS Violation Code 21 indicates that the system found fecal coliform or E. coli, potentially harmful bacteria, in its water, thereby violating the rule.

Non-acute MCL violation: SDWIS Violation Code 22 indicates that the system found total coliform in samples of its water at a frequency or at a level that violates the rule. For systems collecting fewer than 40 samples per month, more than one positive sample for total coliform is a violation. For systems collecting 40 or more samples per month, more than 5% of the samples positive for total coliform is a violation.

Major routine and follow-up monitoring: SDWIS Violation Codes 23 AND 25 show that a system did not perform any monitoring. [One number is to be reported for the sum of violations in these two categories.]

Sanitary Survey: SDWIS Violation Code 28 indicates a major monitoring violation if a system fails to collect 5 routine monthly samples if sanitary survey is not performed.

Treatment Techniques: A water disinfection process that EPA requires instead of an MCL for contaminants that laboratories cannot adequately measure. Failure to meet other operational and system requirements under the Surface Water Treatment and the Lead and Copper Rules have also been included in this category of violation for purposes of this report.

Unfiltered Systems: Water systems that do not need to filter their water before disinfecting it because the source is very clean [40 CFR, Subpart H].

Violation: A failure to meet any state or federal drinking water regulation.

APPENDIX B

**LIST OF PUBLIC WATER SUPPLY SYSTEMS
WITH MCL VIOLATIONS**

PWS SYSTEMS WITH SYNTHETIC ORGANIC COMPOUNDS (SOC)
ETHYLENE DIOMIDE (EDB) MCL VIOLATIONS: 1997

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	MOSCOW, CITY OF	2018902	252	MOSCOW	KS	67952

TOTAL POPULATION AFFECTED: 252

PWS SYSTEMS WITH VOLATILE ORGANIC COMPOUNDS (VOC)
BENZENE MCL VIOLATIONS: 1997

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	SATANTA, CITY OF	2008102	1,073	SATANTA	KS	67870

TOTAL POPULATION AFFECTED: 1,073

PWS SYSTEMS WITH TOTAL TRIHALOMETHANES (TTHM) MCL VIOLATIONS: 1997

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	MIAMI CO RWD #2	2012101	13,282	PAOLA	KS	66071

TOTAL POPULATION AFFECTED: 13,282

PWS SYSTEMS WITH NITRATE MONITORING VIOLATIONS: 1997

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	DONIPHAN CO RWD #3	2004301	437	DENTON	KS	66017

TOTAL POPULATION AFFECTED: 437

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PWS SYSTEMS WITH NITRATE MCL VIOLATIONS: 1997

	PWS NAME	EPA #	# OF VIO	POP	LOCATION	ZIP
1	ABILENE, CITY OF	2004112	3	6,242	ABILENE	67410
2	ALMENA, CITY OF	2013701	1	517	ALMENA	67627
3	ATTICA, CITY OF	2007703	4	716	ATTICA	67009
4	BAZINE, CITY OF	2013505	3	375	BAZINE	67516
5	BURNS, CITY OF	2011501	1	226	BURNS	66840
6	BUSHTON, CITY OF	2015905	1	341	BUSHTON	67427
7	CASEY'S GENERAL STORE #1869	2117342	1	25	MAIZE	67101
8	DICKINSON RWD #2	2004106	1	1,509	CARLTON	67448
9	DONIPHAN RWD #3	2004301	2	437	DENTON	66017
10	FAIRFIELD HIGH SCHOOL USD 312	2115514	4	285	LANGDON	67549
11	GAYLORD, CITY OF	2018301	4	173	GAYLORD	67638
12	GOODLAND, CITY OF	2018102	2	4983	GOODLAND	67735
13	GREEN, CITY OF	2002703	2	154	GREEN	67447
14	HAVEN, CITY OF	2015514	1	1,198	HAVEN	67543
15	HIAWATHA, CITY OF	2001305	3	3,603	HIAWATHA	66434
16	JEFFERSON CO RWD #15	2008721	1	228	PERRY	66073
17	JEWELL CO RWD #1	2008907	4	959	ESBON	66941
18	KIRWIN, CITY OF	2014702	3	269	KIRWIN	67644
19	LARNED STATE HOSPITAL	2014503	1	1,065	LARNED	67550
20	LEONARDVILLE, CITY OF	2016120	3	374	LEONARDVILLE	66449
21	LOGAN, CITY OF	2014701	4	633	LOGAN	67646
22	LONG ISLAND	2014703	3	164	LONG ISLAND	67647
23	LUCAS, CITY OF	2016702	4	452	LUCAS	67648
24	NORWICH, CITY OF	2009505	2	455	NORWICH	67118
25	OBERLIN, CITY OF	2003903	1	2,197	OBERLIN	67749
26	OSBORNE CO RWD #1A	2014103	2	81	ALTON	67623
27	PORTIS, CITY OF	2014104	4	129	PORTIS	67474
28	PRATT, CITY OF	2015103	1	6,687	PRATT	67124
29	PRETTY PRAIRIE, CITY OF	2015501	1	601	PRETTY PRAIRIE	67570
30	PROTECTION, CITY OF	2003302	1	620	PROTECTION	67127
31	RANCHO APTS & TRAILER PARK	2105506	1	100	GARDEN CITY	67846
32	RAYMOND, CITY OF	2015901	4	125	RAYMOND	67573
33	REPUBLIC, CITY OF	2015709	4	177	REPUBLIC	66964
34	SPIVEY, CITY OF	2009504	4	88	SPIVEY	67142
35	ST LEO REGIONAL CATHOLIC SCH.	2109506	1	25	NASHVILLE	67112
36	ST MARYS, CITY OF	2014914	2	1791	ST MARYS	66536

TOTAL NUMBER OF VIOLATIONS: 84
TOTAL POPULATION AFFECTED: 38,004

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PWS SYSTEMS WITH SELENIUM MCL VIOLATIONS: 1997

	PWS NAME	EPA #	# OF VIO	POP	LOCATION	ZIP
1	ALMENA, CITY OF	2013701	1	517	ALMENA	67627
2	GLADE, CITY OF	2014708	1	138	GLADE	67639
3	GOVE, CITY OF	2006303	1	103	GOVE	67736

TOTAL NUMBER OF VIOLATIONS: 3
TOTAL POPULATION AFFECTED: 758

PWS SYSTEMS WITH SELENIUM MONITORING VIOLATIONS: 1997

	PWS NAME	EPA #	# OF VIO	POP	LOCATION	ZIP
1	BURR OAK, CITY OF	2008906	1	278	BURR OAK	66936
2	GLADE, CITY OF	2014708	1	138	GLADE	67639
3	GOVE, CITY OF	2006303	1	103	GOVE	67736
4	LOGAN, CITY OF	2014701	1	633	LOGAN	67646

TOTAL NUMBER OF VIOLATIONS: 4
TOTAL POPULATION AFFECTED: 1,152

PWS SYSTEMS WITH RADIONUCLIDE MCL VIOLATIONS: 1997

	PWS Name	EPA #	# OF VIO	POP	LOCATION	ZIP
1	CAPALDO WATER ASSOCIATION	2003715	1	152	FRONTENAC	66762
2	COLUMBUS, CITY OF	2002110	2	3,268	COLUMBUS	66725
3	COOLIDGE, CITY OF	2007501	4	90	COOLIDGE	67836
4	CRAWFORD CO RWD #5	2003702	1	1,487	PITTSBURG	66762

TOTAL NUMBER OF VIOLATIONS: 8
TOTAL POPULATION AFFECTED: 4,997

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**PWS SYSTEMS WITH TOTAL COLIFORM
ACUTE MCL VIOLATIONS: 1997**

	PWS NAME	EPA #	# OF		LOCATION	ZIP
			VIO	POP		
1	BULTER CO RWD #8	2001528	1	928	ROSE HILL	67133
2	COUNTRYVIEW MOBILE HOME PARK	2015520	1	50	HUTCHINSON	67502
3	FRANKLIN CO RWD #5	2005908	1	475	OTTAWA	66067
4	HIDDEN LAKE RESTAURANT	2105723	1	25	DODGE CITY	67801
5	LABETTE CO RWD #2	2009913	1	180	PARSONS	67357
6	RUSSELL CO RWD #4	2016705	2	90	GORHAM	67640
7	SHEPHERD'S GATE BOYS HOME	2116907	1	50	ASSARIA	67416
8	THE EVERGREEN INN	2115108	1	25	PRATT	67124
9	TUTTLE TERRACE TRAILER COURT	2016102	1	67	MANHATTAN	66502
10	WALLACE CO RWD #1	2019901	1	200	WESKAN	67762

TOTAL NUMBER OF VIOLATIONS: 11
TOTAL POPULATION AFFECTED: 2,090

**PWS SYSTEMS WITH TOTAL COLIFORM
NON-ACUTE MCL VIOLATIONS: 1997**

	PWS NAME	EPA #	# OF		LOCATION	ZIP
			VIO	POP		
1	ALLEN, CITY OF	2011102	2	205	ALLEN	66833
2	BED ROCK MOBILE HOME PARK	2006707	1	45	ULYSSES	67880
3	BULTER CO RWD #8	2001528	1	928	ROSE HILL	67133
4	CHURCH OF JESUS CHRIST	2116110	1	25	WICHITA	67212
5	CLAYTON, CITY OF	2013706	1	91	CLAYTON	67629
6	COTTONWOOD MOBILE HOME PARK	2005533	1	79	GARDEN CITY	67846
7	COUNTRYSIDE RENTALS	2005512	1	92	GARDEN CITY	67846
8	COUNTRYVIEW MOBILE HOME PARK	2015520	1	50	HUTCHINSON	67502
9	COWLEY CO RWD #5	2003508	1	1,356	BURDEN	67019
10	EASTON, CITY OF	2010301	1	405	EASTON	66020
11	FRANKLIN CO RWD #5	2005908	1	475	OTTAWA	66067
12	GRIDLEY, CITY OF	2003103	1	356	GRIDLEY	66852
13	HARTFORD, CITY OF	2011111	1	541	HARTFORD	66854
14	HARVEY CO WEST PARK	2107906	1	26	NEWTON	67114
15	HIDDEN LAKE RESTAURANT	2105723	3	25	DODGE CITY	67801
16	HILLCREST (J&J TRAILER PARK)	2005530	1	70	GARDEN CITY	67846
17	LABETTE CO RWD #2	2009913	1	140	OSWEGO	67357

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18	MAHASKA, CITY OF	2020102	1	98	MAHASKA	66955
19	MANCHESTER, CITY OF	2004103	1	84	MANCHESTER	67463
20	MIDWAY USA TRUCK STOP	2117507	2	25	LIBERAL	67901
21	MILFORD, CITY OF	2006109	1	384	MILFORD	66514
22	MOSCOW, CITY OF	2018902	1	252	MOSCOW	67952
23	NESS CITY, CITY OF	2013503	1	1,724	NESS CITY	67560
24	NORTHWEST INDUSTRIAL DISTRICT	2105529	1	60	GARDEN CITY	67846
25	PJ'S RESTAURANT	2108501	1	50	HOLTON	66436
26	PANHANDLE EASTERN	2117506	1	22	LIBERAL	67901
27	PRATT LIVESTOCK INC	2115107	1	25	PRATT	67124
28	ROOKS CO RWD #2	2016306	1	70	CODELL	67630
29	RUSSELL CO RWD #4	2016705	3	90	GORHAM	67640
30	SHEPHERD'S GATE BOYS HOME	2116907	2	50	ASSARIA	67416
31	ST JOSEPH SCHOOL	2115513	1	80	ANDALE	67001
32	STUCKEY'S PECAN SHOPPE	2119301	1	25	BREWSTER	67732
33	SUNSHINE MOBILE HOME PARK	2005529	1	65	GARDEN CITY	67846
34	TATARRAX HILLS WATER DISTRICT	2016132	2	96	MANHATTAN	66502
35	THE EVERGREEN INN	2115108	1	25	PRATT	67124
36	TIMKEN, CITY OF	2016504	2	87	TIMKEN	67582
37	TUTTLE TERRACE TRAILER COURT	2016102	1	67	MANHATTAN	66502
38	VFW POST #8773	2106125	3	25	JUNCTION CITY	66441
39	WALDO, CITY OF	2016709	2	57	WALDO	67673
40	WALLACE, CITY OF	2019902	1	75	WALLACE	67761
41	WALLACE CO RWD #1	2019901	1	200	WESKAN	67762
42	WELLINGTON, CITY OF	2019119	1	8,411	WELLINGTON	67153
43	WILLIS, CITY OF	2001311	1	86	WILLIS	66435
44	WILSON CO RWD #3	2020503	1	37	NEODESHA	66757
45	WILSON CO RWD # 5	2020507	1	275	FREDONIA	66736

TOTAL NUMBER OF VIOLATIONS: 57
TOTAL POPULATION AFFECTED: 17,454

PWS SYSTEMS WITH TOTAL COLIFORM MONITORING VIOLATIONS: 1997

	PWS NAME	EPA #	# OF VIO	POP	LOCATION	ZIP
1	ALL SEASONS CAMPGROUND / KOA	2117326	12	33	GODDARD	67052
2	ANDERSON CO RWD #5	2000306	1	2,250	KINCAID	66039
3	ATCHINSON CO RWD #4	2000501	1	310	HOLTON	66436
4	BEATTIE, CITY OF	2011712	1	221	BEATTIE	66406
5	BELPRE, CITY OF	2004701	9	116	BELPRE	67519
6	BLASI DAY CARE	2117336	1	80	WICHITA	67216
7	BURR OAK, CITY OF	2008906	1	278	BURR OAK	66936
8	CHICOPEE RUAL WATER DISTRICT	2003704	1	418	PITTSBURG	66762
9	CLAYTON, CITY OF	2013706	1	91	CLAYTON	67629
10	COUNTRYVIEW MOBILE HOME PARK	2015520	1	50	HUTCHINSON	67502
11	COWLEY CO RWD #8	2003515	1	30	WINFIELD	67156
12	CULLISON, CITY OF	2015104	3	120	CULLISON	67034
13	D & W WATER COMPANY INC	2016101	2	81	MANHATTAN	66502
14	DE DEE'S I-70	2116111	3	25	MANHATTAN	66502
15	DONIPHAN CO RWD #3	2004301	2	437	DENTON	66017
16	DREAMLAND MOTEL	2106118	1	25	JUNCTION CITY	66441
17	EASTON, CITY OF	2010301	1	405	EASTON	66020
18	EL ZARAPE WEST	2105532	3	25	GARDEN CITY	67846
19	ELREKA SCHOOL USD 312	2115517	1	96	HAVEN	67543
20	EMMETT, CITY OF	2014901	1	165	EMMETT	66422
21	FONTANA, CITY OF	2012107	1	131	FONTANA	66026
22	GEARY CO RWD #2	2006102	1	78	JUNCTION CITY	66441
23	HEARTLAND CHRISTIAN SCHOOL	2119304	2	60	COLBY	67701
24	HEARTLAND FAMILY RESORT, INC	2107902	1	25	HALSTEAD	67056
25	HOWISON HEIGHTS WATER DISTRICT	2016909	1	87	SALINA	67401
26	HUNTER'S CLUB	2106126	6	25	JUNCTION CITY	66441
27	JOHNSTON TRAILER COURT	2006116	1	22	JUNCTION CITY	66441
28	LABETTE CO RWD #1	2009907	1	140	OSWEGO	67356
29	LABETTE CO RWD #4	2009909	1	120	OSWEGO	67356
30	LACYGNE, CITY OF	2010703	1	1,066	LACYGNE	66040
31	LEAVENWORTH CO RWD #5	2010318	1	740	LEAVENWORTH	66048
32	LEAVENWORTH CO RWD #10	2010315	1	250	LINWOODSD	66052
33	MARION CO IMPROVEMENT DISTRICT	2011512	1	500	MARION	66861
34	MIAMI CO RWD #3	2012104	1	1,855	OSAWATOMIE	66071

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35	MIDWAY USA TRUCKSTOP/WES-KAN OIL	2117507	3	100	LIBERAL	67901
36	NEOSHO CO RWD #11	2013318	4	73	ERIE	66733
37	NETAWAKA, CITY OF	2008509	1	167	NETAWAKA	66516
38	NICODEMUS TWP(VILLA HOUSING PWS)	2006505	5	32	BOGUE	67625
39	OAKLEY, CITY OF	2010901	1	2,343	OAKLEY	67748
40	OSBORNE CO RWD #1A	2014103	1	81	ALTON	67623
41	P J'S RESTAURANT	2108501	2	25	HOLTON	66436
42	PARTRIDGE GRADE SCHOOL-USD 312	2115515	1	100	HAVEN	67543
43	PEABODY, CITY OF	2011509	1	1,371	PEABODY	66866
44	PRAIRIE DUNES COUNTRY CLUB	2115508	1	25	HUTCHINSON	67501
45	PRESTO OIL, INC	2105533	1	25	HOLCOMB	67846
46	QUINSTAR	2106302	2	59	QUINTER	67752
47	R & R MOBILE HOME PARK	2005510	2	55	GARDEN CITY	67846
48	RICK'S RESTAURANT	2115110	2	25	PRATT	67124
49	RUSSELL CO RWD #1	2016707	1	64	RUSSELL	67665
50	ST JOSEPH SCHOOL	2115513	1	80	ANDALE	67001
51	ST PETERS SCHOOL	2117334	6	163	WICHITA	67213
52	SUMNER CO RWD #2	2019107	2	365	WELLINGTON	67152
53	SUNSHINE MOBILE HOME PARK	2005529	1	65	GARDEN CITY	67846
54	TUTTLE TERRACE TRAILER COURT	2016102	4	67	MANHATTAN	66502
55	VFW POST #8773	2106125	1	25	JUNCTION CITY	66441
56	VIRGIL, CITY OF	2007307	3	98	VIRGIL	66870
57	WABAUNSEE CO RWD #1	2019706	1	270	ESKRIDGE	66423
58	WALLACE, CITY OF	2019902	1	75	WALLACE	67761
59	WEST HILLS SUBDIVISION	2015519	1	50	NICKERSON	67561
60	WESTHAVEN MOBILE HOME PARK	2005513	1	48	GARDEN CITY	67846
61	WHEATLAND CAFE	2118503	7	25	HUDSON	67545

TOTAL NUMBER OF VIOLATIONS: 124
TOTAL POPULATION AFFECTED: 16,231

PWS SYSTEMS WITH SURFACE WATER TREATMENT VIOLATIONS: 1997

ROUTINE & REPEAT MONITORING VIOLATIONS

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	EL DORADO, CITY OF	2001511	12,032	EL DORADO	KS	67042
2	ELK CITY, CITY OF	2012520	334	ELK CITY	KS	67344
3	PARKER, CITY OF	2010706	256	PARKER	KS	66072
4	PUBLIC WHOLSALE WSD #12	2013919	10	MELVERN	KS	66510
5	RICHMOND, CITY OF	2005904	528	RICHMOND	KS	66080
6	ROCK SPRINGS 4H CAMP	2106114	63	JUNCTION CITY	KS	66441
7	SPRING HILL, CITY OF	2009120	2,191	SPRING HILL	KS	66083
8	TORONTO, CITY OF	2020701	317	TORONTO	KS	66777

TOTAL POPULATION AFFECTED: 15,731

TREATMENT TECHNIQUE VIOLATIONS

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	ATCHISON, CITY OF	2000506	10,656	ATCHISON	KS	66002
2	BLUE MOUND, CITY OF	2010701	251	BLUE MOUND	KS	66010
3	BRONSON, CITY OF	2001106	343	BRONSON	KS	66716
4	COFFEYVILLE, CITY OF	2012513	12,917	COFFEYVILLE	KS	67337
5	HILLSBORO, CITY OF	2011505	2,704	HILLSBORO	KS	67063
6	HOWARD, CITY OF	2004901	852	HOWARD	KS	67349
7	LACYGNE, CITY OF	2010703	1,066	LACYGNE	KS	66040
8	LEROY, CITY OF	2003109	568	LEROY	KS	66857
9	LONGTON, CITY OF	2004903	412	LONGTON	KS	67352
10	NEODESHA, CIY OF	2020502	2,837	NEODESHA	KS	66757
11	OSAGE CITY, CITY OF	2013907	2,689	OSAGE CITY	KS	66523
12	PUBLIC WHOLSALE WSD #11	2003725	11	GIRARD	KS	66743

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13	ROCK SPRINGS 4H CAMP	2106114	63	JUNCTION CITY	KS	66441
14	SEDAN, CITY OF	2001903	1,435	SEDAN	KS	67361

TOTAL POPULATION AFFECTED: 36,804

PWS SYSTEMS WITH LEAD & COPPER VIOLATIONS: 1997

INITIAL LEAD/COPPER TAP MONITORING VIOLATION

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	HEARTLAND CHRISTIAN SCHOOL	2119304	60	COLBY	KS	67701
2	JOHNSTON TRAILER COURT	2006116	22	JUNCTION CITY	KS	66441
3	MARION CO IMPROVEMENT DISTRICT	2011512	500	MARION	KS	66861
4	NEOSHO CO RWD #11	2013318	73	ERIE	KS	66733

TOTAL POPULATION AFFECTED: 655

FOLLOW-UP or ROUTINE LEAD/COPPER TAP MONITORING VIOLATIONS

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	ATCHISON, CITY OF	2000506	10,656	ATCHISON	KS	66002
2	BALL MOBILE HOME PARK	2005532	32	GARDEN CITY	KS	67846
3	HOWISON HEIGHTS WATER DISTRICT	2016909	87	SALINA	KS	67401
4	MANCHESTER, CITY OF	2004103	84	MANCHESTER	KS	67463
5	NEOSHO CO RWD #7	2013303	565	CHANUTE	KS	66720
6	R & R MOBILE HOME PARK	2005510	55	GARDEN CITY	KS	67846
7	RICHMOND, CITY OF	2005904	528	RICHMOND	KS	66080
8	ROZEL, CITY OF	2014502	280	ROZEL	KS	67574
9	TORONTO, CITY OF	2020701	317	TORONTO	KS	66777
10	TUTTLE TERRACE TRAILER COURT	2016102	67	MANHATTAN	KS	66502
11	WESTHAVEN MOBIL HOME PARK	2005513	26	GARDEN CITY	KS	67846

TOTAL POPULATION AFFECTED: 12,667

TREATMENT INSTALLATION VIOLATIONS

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP

1	NORTON, CITY OF	2013702	3,017	NORTON	KS	67654
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TOTAL POPULATION AFFECTED: 3,017

PWS SYSTEMS WITH LEAD & COPPER VIOLATIONS: 1997

PUBLIC EDUCATION VIOLATIONS

	PWS NAME	EPA #	POP	LOCATION	ST	ZIP
1	BARNARD, CITY OF	2010503	129	BARNARD	KS	67418
2	MATFIELD GREEN, CITY OF	2001702	30	MATFIELD GREEN	KS	66862
3	MULLINVILLE, CITY OF	2009701	289	MULLINVILLE	KS	67109

TOTAL POPULATION AFFECTED: 448

APPENDIX C

LIST OF KDHE CONTACTS
FOR ADDITIONAL INFORMATION

For additional copies of this report please contact KDHE's Bureau of Water. For any questions regarding drinking water, please contact any of the following:

KANSAS DEPARTMENT OF HEALTH AND ENVIRONMENT
BUREAU OF WATER
PUBLIC WATER SUPPLY SECTION
FORBES FIELD, BUILDING 283
TOPEKA, KS 66620

Director, Division of Environment
RON HAMMERSCHMIDT (785) 296-1535

Director, Bureau of Water
KARL MUELDENER (785) 296-5500

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DAVE WALDO (785) 296-5514

Compliance and Data Management Unit Chief
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IRAJ POURMIRZA (785) 296-5539

Bacteriological, Surface Water Treatment, Radionuclides
JEAN HERROLD (785) 296-5518

Lead and Copper, Trihalomethanes
RON CRAMER (785) 296-5946

Inorganic, Volatile, and Synthetic Compounds, Nitrate
PATTI VOIERS (785) 296-3016

Data Management
CLAUDINE DUNN (785) 296-0735

Compliance
PETER ARMESTO (785) 296-6297

Safe Drinking Water Hotline (800) 426-4791

